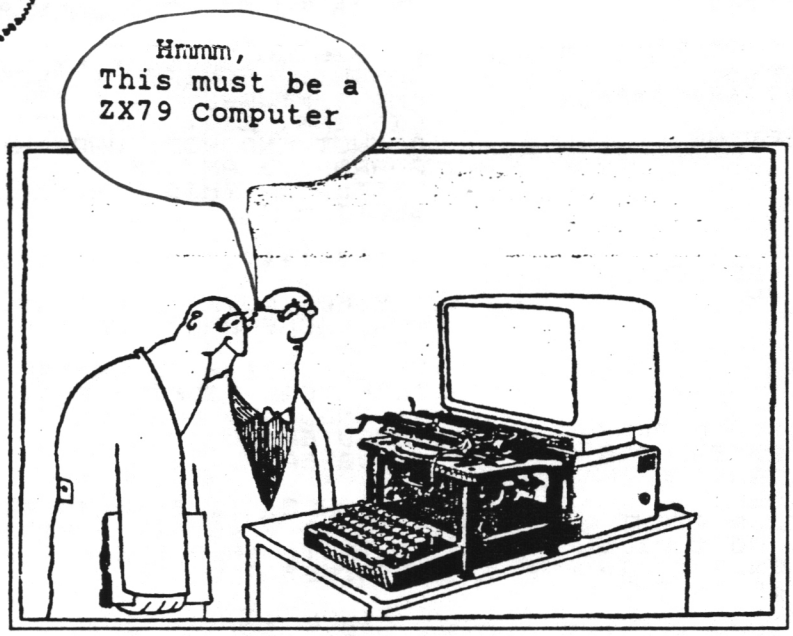
LISTing Newsletter

Newsletter of the Long Island Sinclair/Timex Users Group **Next Meeting**



Listing Policy

Annual Dues $16.00

One "sample" copy sent upon receipt of Business size SASE. Copies provided on EXCHANGE BASIS with other bona fide user groups. LISTing is published monthly except July and August by LIST (Long Island Sinclair Timex) Group, a not for profit user group.

We are always looking for articles, programs, reviews etc. to keep our members informed and entertained. You maintain full credit and copyright.

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COMING EVENTS:

OCT. 16, 1994 LIST MEETING.

SPECIAL NOTICE

THE NEXT MEETING WILL BE HELD AT THE ICE CREAM DISPENSARY (HARVEYS STORE)
334 DOGWOOD AVENUE
FRANKLIN SQUARE, N.Y.
TEL: 516-486-1090

DIRECTIONS; SOUTHERN STATE PKWY TO EXIT 17 NORTH (HEMPSTEAD AVE) GO TO FIRST TRAFFIC LIGHT, LEFT TURN ON TO CORNWALL, NEXT TRAFFIC LIGHT, BEAR RIGHT ON TO DOGWOOD AVENUE. GO 1 MILE TO THE ICE CREAM DISPENSARY, IN A SMALL SHOPPING CENTER ON THE LEFT SIDE OF THE ROAD.

MEETING MINUTES
REPORTED BY: FRED STERN.
SEPT. 11, 1994

THE MEETING WAS CALLED TO ORDER BY HARVEY AT 2:00PM

IN THE MAIL WE RECEIVED 2 CORRESPONDENCE, ONE FROM A SINCLAIRIST IN MOROCCO INTERESTED IN JOINING LIST.

DURING A ROUNDTABLE DISCUSSION THE MEMBERSHIP DECIDED THAT OVERSEAS MEMBERSHIP DUES SHOULD BE $23.00, PAYABLE IN U.S. DOLLARS. THE $7.00 ADDITION TO THE $16.00 U.S. MEMBERSHIP IS FOR ADDITIONAL POSTAGE REQUIRED FOR SENDING LISTING.

BOB GILDER INFORMED US THAT PHIL FLORIO IS MOVING TO TENNESSEE. WE ALL WISH PHIL AND HIS FAMILY THE BEST OF LUCK.

BOB GILDER ALSO INFORMED US THAT HE RECEIVED A RGB MONITOR FROM PHIL. WITH THE ADDITION OF A SYNC-STRIPER, IT WORKS GREAT WITH BOBS QL.

FRED REPORTED THAT HE ACQUIRED 2 ZX-80 COMPUTERS FROM DONALD LAMBERT. 1 UNIT WORKS GREAT, BUT THE OTHER REQUIRES SOME REPAIRS TO MAKE IT OPERATIONAL.

WE ALL SEND GET WELL WISHES TO DONALD LAMBERT WHO IS ON THE MEND FROM EYE SURGERY

JOHN PAZMINO INFORMED US THAT INTERNET HAS A SEPARATE T/S BOARD. SEE PAGE 10 FOR MORE DETAILS.

CLASSIFIEDS

THIS CLASSIFIED SECTION IS AVAILABLE TO ALL LIST MEMBERS FREE OF CHARGE.
THE ONLY RESTRICTION IS THAT IT IS TO BE USED ONLY FOR THE SEEKING, SELLING OR SWAPPING OF SINCLAIR, TIMEX OR MICROACE COMPUTER EQUIPMENT, PERIPHERALS AND SOFTWARE.
LISTING, LIST, AND ITS OFFICERS DO NOT ENDORSE, WARRANTY, OR GUARANTEE ANY OF THE ITEMS LISTED IN THIS CLASSIFIED SECTION

THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY THROUGH LIST:

ZX-81/TS1000 TECHNICAL TIDBITS
TECHNICAL TIDBITS PART II
SAVINGS AND LOAD OF THE TIMEX COMPUTER
$4.00 EACH.

FOR SALE: TIMEX PRINTER PAPER, 3 ROLLS - $5.00+ POSTAGE.
CONTACT; FRED STERN 516-737-0963 EVENINGS AND WEEKENDS.

A FINAL WORD

MY NAME IS FRED STERN AND I AM THE EDITOR OF THIS EDITION OF LISTING.

HAVING ACQUIRED A ZX-80, I HAVE BEEN RESEARCHING ARTICLES ABOUT THE MACHINE. ENCLOSED ARE MY FINDINGS, THANKS TO SYNC MAGAZINE.

BOB GILDER HAS TAKEN ON THE POSITION OF PUBLISHER OF LISTING. NOW, PERHAPS SOMEONE WILL STEP FORWARD TO BE A REPORTER. IT WOULD BE NICE TO HAVE SOME NEW ORIGINAL ARTICLES IN THIS NEWSLETTER FOR A CHANGE.

THANK YOUS TO TOM SKAPINSKI, AND BOB GILDER FOR THERE HELP AND CONTRIBUTIONS TO THIS ISSUE.

A VERY SPECIAL THANK YOU TO HARVEY FOR HIS HOSPITALITY, AND THE USE OF HIS STORE FOR OUR MEETING. ALSO TO MIKEY FOR HIS CONTRIBUTIONS.

SEE YOU ALL AT THE NEXT MEETING.

QL CORNER

This months QL Corner will provide our QL enthusiasts with some 'Good buys' for useful computer products and services. First off, the services for our corresponding club members are printer ribbon reinking and eprom burning.

For the past few years, Bob Malloy provided his printer ribbon inker for LIST members attending meetings, where members could reink their ribbons either before or after meetings. Since Bob and I have ribbon reinkers, I am extending an offer to our corresponding members to send in their old ribbons to me for free reinking, provided you enclose return postage.

The next offer is for 'blowing' eproms for our corresponding LIST members. If you need duplicate ROMs for your QL or disk operating system as well as ROMS for the Eprom expansion port, just send me the code on microdrive cartridge, disk or eprom with the code written to it and I will burn it for you. If you require blank eproms for this service, I can provide you with one at an extremely low price. 27C128A for $2.00, 27C256 at $2.50 and 27C512 at $2.90 each. These eproms are prime quality 'pulls', which I clean and erase. These prices are approximately one-third the cost of new eproms and are high quality. Please enclose return postage.

I'd like to introduce a publication which I have had the good fortune of having a lifetime subscription for the sum of $30.00. NUTS & VOLTS Magazine, over the past years has become my first choice for purchasing first class, surplus computer products; primarily disk drives, drive cases and power supplies as well as semiconductors and diskettes. Below are some of the advertisers which which account for the success of Nuts & Volts Magazine. This publication sells for $3.00 at newstands and the subscription price is $17.00 1 year, $31.00 2 years, mailed third class, USA ONLY! First Class mail subscriptions are for one year only at: $34.00 - USA, $35.00 - Canada and Mexico, $70.00 - Foreign/Air Mail or $39.00 Foreign/Surface mail. NUTS & VOLTS Magazine, 430 Princeland Court, Corona, CA 91719 USA.

Recently I purchased 500, 3 1/2 inch, 720K diskettes at $100.00 - 20 cents each. These diskettes are over labeled on manufactured software. I shared this lot with my brother and every disk formatted perfectly. BNF Enterprises, 119 Foster Street, Peabody, MA 01960, Telephone: 508-532-2323, Fax: 508-532-1040. They now sell the 720K diskettes at a lower price - 100 @ $19.00, 50 @ $11.00 and 10 for $3.00. If you have high density drives, 1.44M, they price HD disks as follows: 100 @ $29.00, 50 @ $16.00 and 10 $4.00. 5 1/4 inch 360K disks are also available at: 100 @ $9.00, 25 @ $3.00. Though they are 360K capacity, most QL users are aware that 360K disks will format at 720K. I have been dealing with BNF for approximately 30 years and they are very reliable. If you send them a SASE, they will send you their current flyer.

While on the subject of disks; any diskettes I purchase, I format immediately. How many times have you required a duplicate or backup of a program or data, only to find that the diskette you inserted in your drive was unable to accept the data due to a non-formatted disk! I wrote a simple formatting program which beeps when the disk has been formatted, alerting me that I could remove the diskette from the drive, insert another disk in the drive and press Enter to activate the formatting process as many times as needed.

```
5  CLS #1: CLS #2
10 INPUT "Format how many disks? ";d
15 PRINT
20 INPUT "Format from which drive?, Please ENTER          flp1_, flp2_ or flp3_"
 ,drive$
25 CLS
30 FOR i = 1 TO d
35 PRINT i;" - ";
40 FORMAT drive$
45 DIR drive$
```

```
50 BEEP 0,30:PAUSE 50:BEEP
55 PAUSE
60 NEXT i
65 STOP
70 DELETE flp1_FM: SAVE flp1_FM
```

An other surplus company that I have recent dealings with is PRIME COMPONENTS, INC., 150 West Industry Court, Deer Park, NY 11729, Telephone 516-254-0101, Fax: 516-242-8995. They originally operated in New Jersey and many times I thought about ordering Eprom Pulls from them. When I looked up their ad in Nuts & Volts, I was astounded to learn that they were only a 25 minute drive from my house, and so I decided to pay them a visit. I ordered 10, 27C512 Eprom Pulls @ $2.65 each, guranteed GOOD! Eprom pulls are eproms which were programmed and installed on computer motherboards. The only catch is that they must be cleaned and erased which is no problem. When I arrived home and removed the eproms from the anti-static carrier, I realized that they gave me 11 eproms for the price of 10, in the event one eprom may be bad. Cleaning eproms was accomplished with a brushing of turpintine, then allowing some time for drying; then they were swabbed with alcohol for additional cleaning of the window. Each eprom was erased for approximately 12 minutes and then they were tested in the QEP eprom programmer - all 11 eproms tested OK.

Prime Components Inc, carry NMOS and COMOS Eproms in all sizes from 2716 to 27C216, plus the 8742 and 8749 programmable microprocessors, all at excellent prices. They market a brand new 720K, 3 1/2 inch Tandy disk drive @ $14.95. The catch is that the face plate is made for a Tandy computer which doesn't conform to a rectangular shape. However, it would probably make a good backup disk drive. Send them a card and tell them you read their advertisement and you wish to receive a catalog.

Halted Specialties Co, 3500 Ryder Street, Santa Clara, CA 95051, Tel: 408-732-1573. A toll free number is available for orders only: 1-800-442-5833. An Everex 2400 baud modem PC board, fully populated and working, RS-232 external type, Hays compatible, $8.95, Stock number HSC# 14467. Requires a 12 volt plug-in power supply which they sell for approximately $2.00. Quite a few QL users have already taken advantage of this offer. Halted will enclose a catalog with a purchase or write to them requesting one.

The publication has lots of classified ads for computer products and for other electronic hobbies. Through the past years I have ordered disk drives and hardware from advertisers of Nuts & Volts and have been completely satisfied with their products.

The Events calendar is the first section that I browse through which provides information of computer and HAM fests, such as the LIMARC HAMFEST, October 16th (the same date as our LIST MEETING), held at the NY State Institute of Technology, Route 25A (Northern Blvd), Old Westbury. Hours are 9AM to 4PM. Admission: $6.00. This is a good show. Two years ago Bob Malloy needed a disk drive case with a power supply and purchased one for $15.00 and a 5 1/4 inch drive was included. When we were using 300 baud modems in the early years of the QL, we purchased external modems for as little as $1.00 to $2.00 each.

Bob Malloy and I have rejoined the New England Sinclair QL User Group. Dues are $10.00 and provide members with an excellent newsletter, published six times annually. Ed Kingsley, publisher of the NESQLUG newsleter provides their members with an excellent mix of articles within the newsletter. If you have a spare ten dollars, why not support them!

See you next month. Bob Gilder

SYNC

Adding an LED Load Monitor to the MicroAce

Cecil Bridges

The input signal level is critical when loading a program from cassette tape. *Save* and *Load* operations can be done with the computer as it exists: One establishes the correct volume control setting on the tape recorder by trial and error. One then secures the volume control in the correct position with sticky tape, or makes a couple of index marks which allow the recorder to be set properly. If one's tape recorder batteries age, or if one tries to load a program recorded by someone else, then a new level has to be re-established by trial and error.

An alternative is to use a load monitor to show when a program to be loaded is at the correct level. Initially, I dedicated an oscilloscipe as a load monitor, but this seemed like overkill, particularly in view of the size discrepancy between the 'scope and the computer. I then added a single LED (light emitting diode) to the tape "ear" input of the computer. The voltage for lighting the LED is just right for loading a program from the cassette tape.

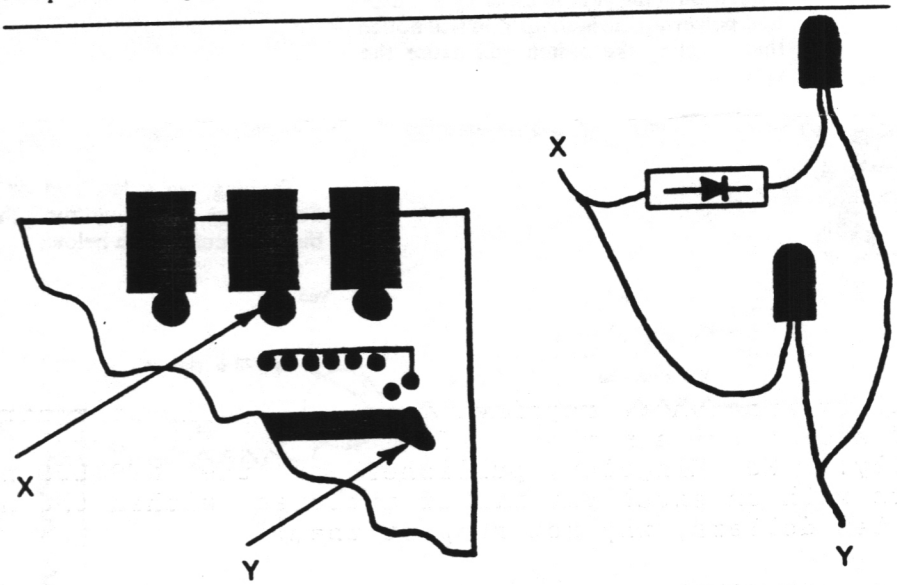
In order to add the LED, it was necessary to get the top off the computer. This was no problem for me because I had already destroyed the plastic rivets in attempting to assemble my Microace, and had substituted small screws. You may want to add the MicroAce 2K RAM option at a later date, and screws look better than the rivets anyway, so very carefully drill out the five rivets around the outside of the top cover, taking special care not to damage the printed circuit board. Get out your soldering pencil and thin rosin core solder. The LED can be soldered into the printed circuit board from the top if you want to avoid taking out the rivets holding the board to the bottom of the case. The short lead on the LED is attached just below the input ("ear") jack at the point marked X in the illustration and the long lead attaches at the point marked Y. You will probably have to extend the leads of the LED with fine insulated wire. Drill a hole in the top of the case where the LED will stick through. Use insulating tape on the bare lead wires of the LED and assemble the case.

To minimize any interaction with the input circuit, use small LEDs which draw less current and have less capacitance than the large ones. I found mine, red, about 2mm in diameter, at Radio Shack. Be careful when bending the leads of these little LEDs; any strain on them will break their little red plastic cases.

In use, the LED will just light up when the tape recorded program is coming in at the correct level, and will remain dark or barely flicker when it is too low for the computer to accept.

I used the single LED load monitor for a while, but later added two additional components to make a more elegant monitor. A second LED was added in parallel with the first, with a silicon diode in series with it to drop the voltage slightly. See the wiring diagram in the illustration. The second LED then acts as an over-voltage indicator when it is lit. The 3/4 volt forward conduction voltage drop across the silicon diode makes a fairly precise bracket for the input voltage. Solder the second LED and the silicon diode to the lead extensions of the first LED, not to the printed circuit board.

Setting the correct tape recorder volume level for loading is now simple. Given a taped program recorded at some unknown level, the volume level is increased (while the tape recorder is playing back the recorded program) until the first LED lights up and the second remains dark. Rewind the tape and it should then load successfully. ■



Cecil Bridges, 1248 N. Denver, Tulsa, OK 74106.

SYNC

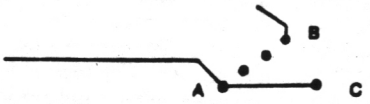
Video Modifications for the ZX80

David Ornstein

REVERSE VIDEO

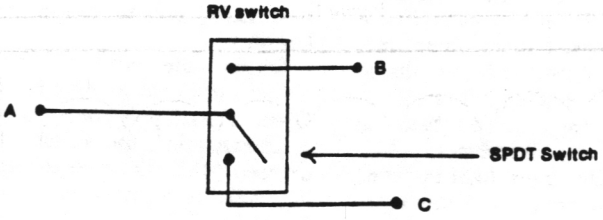
It is possible to directly invert the video signal that leaves the ZX80 and drives your TV. This is done by accessing pin 9/IC9, instead of pin 7/IC9, as the input (pin 4) to IC20. Below are the instructions for the modifications.

Remove the entire case from the ZX80. In the right center section of the back of the PCB you will see an etching that looks like this:



First, cut the trace between points A and C with a razor blade or exacto knife.

Now install the following circuit:

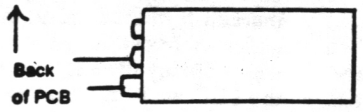


Drill an appropriately sized hole in the case. Mount the switch. Close up the case and power-up the system. You will notice that toggling the switch will cause the video to invert.

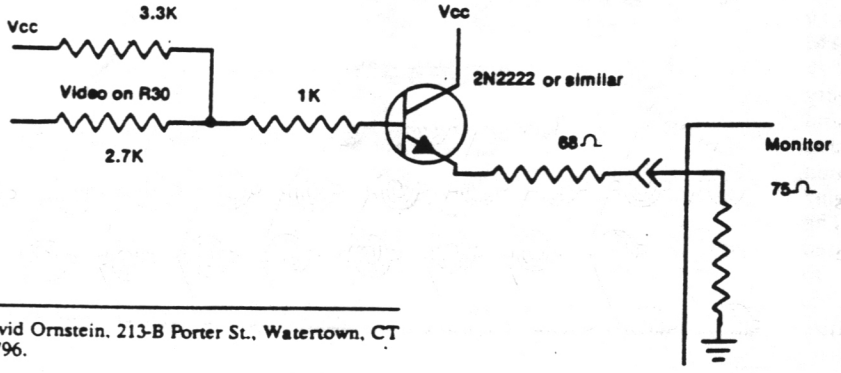
DIRECT VIDEO

It is possible to connect a video monitor directly to the ZX80. This is accomplished by passing the RF modulator and adding a small amount of buffer circuitry. This circuit also reverses the video signal which can be controlled by the RV switch shown earlier.

Open the ZX80. Look at the modulator. (See Below.)



Tapping the video lead on R30 (see Schematic), you should run it through the buffer circuit shown below:



David Ornstein, 213-B Porter St., Watertown, CT 06796.

The ZX80 Keyboard

David Ornstein

The ZX80's keyboard is of the simple membrane type which is matrix scanned to read a key. The principle behind a membrane keyboard is relatively simple and is illustrated below in Figure 1. The base layer is a printed circuit board which has a matrix of circular contacts, like those shown in Figure 2, laid out in a grid. Each contact has two traces running from it.

The top layer of the system is the flexible keyboard template. Located above each contact on the base layer is a small, circular contact. When a key is pressed, the contact on the bottom side of the template presses down on its respective keyboard contact, creating a conductive path, and thus closing the switch.

The process by which a key closure is located is called *matrix scanning*, and it works as follows. As you will note by looking at the schematic diagram of the keyboard in Figure 3, the rows of the keyboard are connected to the anodes of a group of diodes. The cathodes of the diodes are connected to the higher eight address lines. The columns of the keyboard are connected to the inputs of IC10, a 74LS365 tri-state bus driver. The diodes are used to inhibit sinking of the address lines by the pull-up resistors (R13-R17). The resistors are used just on good design principle and do not make any major functional difference in the machine; in fact, the system works without them.

To scan for a key, sequence through each address line, setting it low and all other high. Read the column data from IC10. When an address line is low, its respective diode will allow a logic 0 to pass through; when an address line is high, its respective diode will create an output similar to that of a tri-stated output.

When a key closure is made, either a low signal or a tri-state signal is sent to the input of IC10. IC10, being a standard 74LSxx gate, has internal pull-up resistors on its inputs. A tri-state type signal presented as input to IC10 will, therefore, allow the pull-up resistor to pull-up the input line and turn the input transistor on, thus causing a logic 1 to be the effective input. When a logic 0 input is received, the input line becomes grounded, and the internal input pull-up is disabled, thus causing a logic 0 to be the effective input.

David Ornstein, 213-B Porter St., Watertown, CT 06796.

IC10 is enabled when the signal $\overline{KBD}$ (see Figure 3) is active (i.e., low). As you will note, the signal is derived from two OR gates. Logically, the signal is $\overline{KBD} = A0 + \overline{RD} + \overline{IORQ}$. Essentially, all of the three inputs must be low to enable IC10. This means that an I/O read (a Z80 IN instruction) is being done from any even address (i.e., any address with A0 = 0).

During an I/O request ($\overline{IORQ}=0$), the contents of the A register are placed on the higher eight bits of the address bus. During a keyboard read, the higher eight bits of the address are referred to as the keyboard mask. Executing an IN A, FEh instruction will output the keyboard mask and then read the value of IC10 into the A register. (NB FEh is *not* the only possible port address; any even value will work.)

A simple routine to test for the BREAK key is shown below:

```
LD A,7Fh
IN A, (FEh)
RRA
JR NC, BRKPRS
```

The first instruction loads the keyboard mask into A. This particular mask has all but the ms bit of A (bit 7) set (i.e., 0111 1111 binary). The IN instruction puts out the mask and reads a column from the keyboard. With a mask of 7Fh, the column read is BREAK, EDIT, P, RUBOUT, NOT, NEW, LIST, SHIFT.

When the IN terminates, if no keys were hit, all of the keyboard bits (i.e., d0-d4 of A) will be set. If a key is pressed, then its corresponding bit in A will be a logic 0, provided it was in the selected

Figure 1.

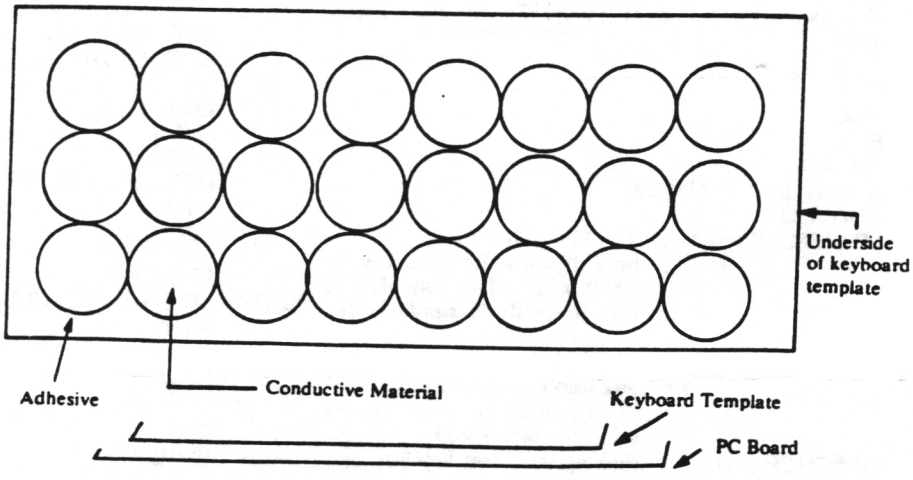
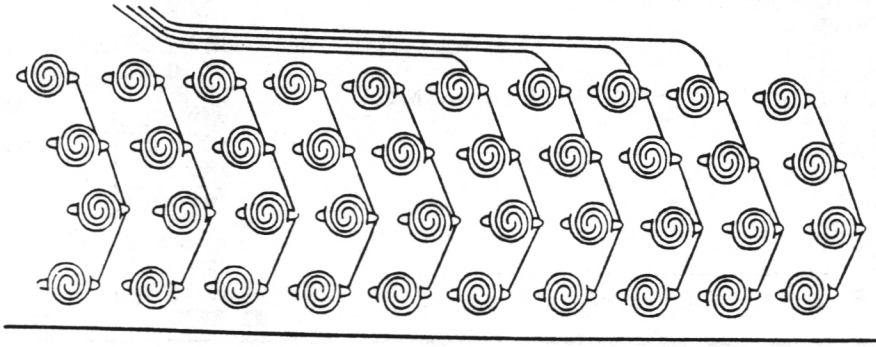


Figure 2.



Listing 1.

```
RESULT:     EQU     4022h
FRAMES:     EQU     401Eh
CH_ADD:     EQU     4026h
LOOP:  Call Show:   Space between last line of chars
                    and fram sync
DISP:               Enter here from BASIC to get a
                    key and display the current
                    display file
                    :
                    Address 319 decimal
                            13F hex
       LD B.8
1$     DJNZ $       : Blow away 99 T-States
       LD HL. (FRAMES) : Get old frame counter
       INC HL       : Increment it
       LD (FRAMES).HL : Put it back
       LD HL.-1
       LD B. ØFEh
       LD C.B
       IN A. (C)    : Start frame sync
       OR 1
5$     OR ØE0h
       LD D.A       : Zero bit for each key pressed
       CPL          : Flip bits
       CP 1
       SBC A.A      : ØØ if any key pressed. else FFh
       OR B
       AND L
       LD L.A
       LD A.H
       AND D
       LD H.A
       RLC B        : Rotate mask left
       IN A. (C)
       JR C.5$      : IF Ø in mask hasn't reach carry
       RRA
       RL H
       RLA
       RLA
       RLA
       SBC A.A
       AND 24: Ø if US. 24 if UK
       ADD A.32
       LD (RESULT+1).A : 32 if US. 56 if UK
                       : no L has a Ø for each row in
                       which a key. other than SHIFT.
                       : was pressed; H similarly for
                       columns in dl-d5. d6d7 are
                       : ones. dØ=Ø. if SHIFT pressed.
                       else dØ=1
                       : 717 T-States since start of frame
                       sync. 545 before end
       LD BC. (CH_ADD) : Pick up last times key hits. or a
                       value with
                       : d15d14=Ø1 if first time around
       LD (CH_ADD). HL
       LD A.B
       ADD A.2      : Now either carry is clear and BC
                    indicates a key was pressed
                    : or carry is set and BC=FFFFh
                    or FEFFh.
                    : N.B. Neither 0000h nor FF00h is a
                    : possible value for HL. since d6
                    d7 are set and. if all of d1 to d5
                    of H
                    : L=-1
       SBC HL.BC    : HL:=Ø if HL=BC and C=FFH
       EX DE HL
       LD HL. RESULT
       LD A. (HL)
       OR D
       OR E
       RET Z        If (X_PTR)=BC. a key is
                    depressed and
                    : count = Ø. exit with A.D.E=Ø
       LD A.B
       CP 254
       SBC A.A.
       AND B
       RRA
       LD (HL). A
       DEC B
25:    DJNZ 25
       OUT (ØFFh). A : frame sync ends at next M1
       LD A.-2Ø
       LD B.25
       LD HL. (D_FILE) : Get HL= first byte of display
                       file
       SET 7.H      : Insure Interrupt
       CALL SHOW    : Display space above picture and
                    24
       LD A.-13     : lines of text
       INC B
       DEC HL
       DEC (IY + RESULT
       +1-Y)        : One less line below picture than
                    above
       JR LOOP
SHOW:  LD C. (IY+RESULT
       +1-Y)        : #picture lines in first line of text
                    (31)
       LD R.A
       LD A.-35     : Value for R in subsequent lines
       EI
       JP (HL)      : Will return to caller at end of
                    picture
```

Listing 2.

```
KB_TAB: EQU 06Ch
FILLDF: EQU 05C2h
DISP:   EQU 013Fh
KWLOW:  EQU 0E6h
GETKEY: Call FILLDP     : Fill display file w/reqd N/Ls
        Call DISP
        SRA B
        SBC A.A
        OR 38
        LD L.5
        SUB L
$1:     ADD A.L
        SCF
        RR C
        JR C.$1
        INC C
        JR NZ.GETKEY    : If more than one bit set
        LD HL.KB_TAB-1
        LD E.A
        ADD HL.DE
        LD A. (HL)
        JR.Z.$2
        ADD A.0C0h      : Here if in KW state: i.e.. convert
                        from
        CP KWLOW        : letter to keyword
        JR N C.$2
        LD A. (HL)
$2:     RET             : Here with char in A
```

column. After the IN instruction, the data for the BREAK key will, therefore, reside in bit 0 of A.

The RRA instruction rotates the contents of register A one bit to the right. Bit 7 comes from the data in the carry flag. The carry flag is set to the data in bit 0 position of A (i.e., the data for the BREAK key). Now the carry flag will contain a 0 if BREAK was pressed; otherwise it will hold a 1. The next instruction, if the carry flag is clear, will jump to BRKPRS.

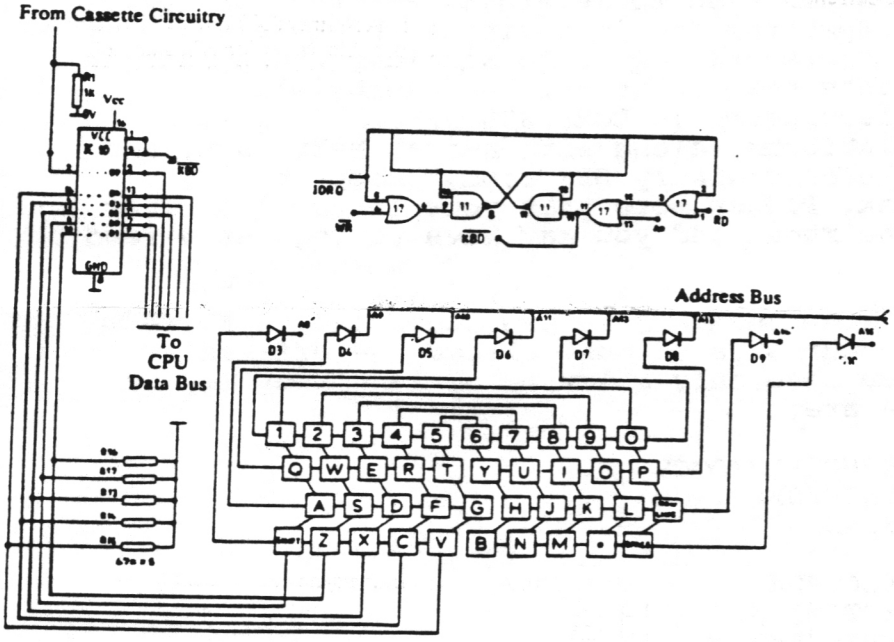
The keyboard and display subroutine scans the keyboard to see if a key was pressed; if not, it passes a frame to the display and loops back to the keyboard scan section. If a key is pressed, then the routine will return to its caller. This routine is shown in Listing 1.

To use the routine, execute a CALL 13Ch instruction. It will return a value in the BC register pair, which corresponds to the keyboard mask and column input for the key pressed. Bits 5, 6, and 7 will be set to ones by the OR 0E0h instruction at 55:. Bit 0 of B will be zero if SHIFT was pressed; otherwise it will be a 1. C will hold the keyboard mask. For example, if the Z key is pressed, B will hold F7h (i.e., 1111 0111) and C will hold FEh (i.e., 1111 1110).

Listing 2 shows a method for obtaining a ZX80 character in A. The subroutine FILLDF assures that there are enough NewLines in the display file.

I hope that this article has provided some insight into the workings of the ZX80 keyboard. ■

Figure 3.



Hardware Tips

LED Fringe Benefit

I added the LEDs to monitor tape input as described by Cecil Bridges. An additional advantage of this modification that he did not mention is that it eliminates the need to disconnect the ear cable on the recorder in order to position a tape for program loading (if you have a tape recorder with a digital counter). Simply advance the tape to the appropriate number on the counter, type LOAD, start the recorder, and when the red light goes out type NEWLINE.

—William H. Caskey

Cecil Bridges' LED Load Monitor

Cecil Bridges' article entitled "Adding an LED Load Monitor to the ZX80" actually describes this useful hardware modification for a MicroAce and not a ZX80. If a schematic were available for this modification to a ZX80, it would be greatly appreciated since the MicroAce diagram is useless to me.

Also, no part numbers are listed for the Radio Shack LEDs that have been used or at least their low current requirements.

Hopefully you can provide me with the necessary information.

—Cal Butler

Ed.—David Ornstein points out that Cecil Bridges' LED Load Monitor can be adapted to work with the ZX80. Although the title implied that the circuit was for use with a ZX80, the connection diagram given was for the MicroAce, as Reader Butler correctly notes. To use the circuit with the ZX80, connect the X wire as shown in the article. The Y wire should be connected to ground. A good place to tap ground is just below IC17, on the large silver pad on the printed circuit board.

Four Tips for MicroAce Owners

These suggestions are based on my experience with the MicroAce.

1. Lacquer thinner and an old toothbrush are useful for cleaning solder flux from the PC board.

2. Changing R24 from 1K to 4.7K increases the sensitivity of the cassette input but still holds pin 2 of U11 close enough to ground for an adequate noise margin.

3. The crystal oscillator did not always start, especially when the computer was first plugged in. This problem was eliminated by a 100K resistor from pin 12 of U18 to ground (across C8). This is a leakage resistor which apparently draws off an accumulating charge on pin 12.

4. The keyboard input IC (U11) blew twice from a static charge while I was using the computer on a carpeted floor. This 74LS365 is replaceable by a 74LS367, which Radio Shack carries.

—David A. Cromely

Thick Black Bars

Thick black bars on the display screen may be caused by 60 Hz. A.C. hum resulting from a failing capacitor in the power supply. Cure is replacement. On my MicroAce this involved breaking open the external power supply case at the glue lines, and replacing the large 1000 M.F.D. capacitor with a new one. Be sure to observe the polarity if you make this replacement.

—Cecil Bridges

Short Video Cable

My son, James Willis, got a ZX80 computer for Christmas 1980, but we have a problem. The video cable with the coaxial plugs is too short for usage.

Can we obtain from the manufacturer a longer coaxial cable and where specifically do we do that?

—Charles D. Willis, M.D.

Ed.—Check your local electronics supply store for a standard coaxial cable with standard RCA plugs. If it does not carry one long enough for your use, the parts should be available to make one. ■

SINCLAIR RIDES INTERNET by John PAzmino

Since joining Internet quite a year ago, I came across several sources for Sinclair news and help. These are in the rooms circulated via Internet and at various sites tied to Internet. For the most part the material relates to the Spectrum and is dominated by British correspondents. Apparently, there are few or no Sinclair clubs left in England; all the correspondents seem to be solitary hobbyists.

The room for Sinclair discussions is COMP.SYS.SINCLAIR. This is in the division for computer platforms, along with Amiga, NeXt, Sun, and the others. It functions like an ordinary BBS room, except that you enter thru your Internet link. Please note that your Internet carrier may offer only certain of the rooms and you may have to request a feed from COMP.SYS.SINCLAIR.

The sites are computer systems that allow the caller to enter directly and fetch material from them. These are accessed via FTP, GOPHER, or WWW. These are features which must already be offered by your Internet carrier. If you have only a low level link they may be unavailable. Sveral of these are:

HTTP://FTP.NVG.UNIT.NO/PUB/SINCLAIR/DOCS
HTTP://WWW.NVG.UNIT.NO/SINCLAIR/SPECTRUM
HTTP://WWW.CS.UMD.EDU/USERS/FMS

FTP://FTP.NVG.UNIT.NO/PUB/SPECTRUM
FTP://WUARCHIVE.WUSTL.EDU/SYSTEMS/SINCLAIR
FTP://OAK.OAKLAND.EDU/PUB/MSDOS/EMULATORS
FTP://FTP.SUN.AC.ZA/PUB/MSDOS/ZX
FTP://FTP.IJS.SI/PUB/ZX

GOPHER://GOPHER.NVG.UNIT.NO

The addresses extend to the lowest directory on the system. From there you must do a catalog listing to see what actual files are loaded. These are updated or changed continually.

Please do understand that any tuition in Internet must come from resources beyond LIST. Stop at the sysop of your Internet carrier. Also cruise the computer bookshops and litterature.

Software at these sites is casually distributed. The original publishers long ago went out of business, leaving their products for the Sinclair community.

One peculiarity of this news and help on Internet is that for the most part it is out of reach from a regular Spectrum machine! Except for online message posting and downloading the samllest textfiles the Spectrum is simply too modest a computer for heavy Internet work. So how do Sinclairs hang out on Internet?

Well, by now there are few native Sinclair machines left. Most have been discarded in favor of IBMs. Correspondents use the IBMs for the telcomms thru Internet. Then they run Spectrum emulators on the IBMs to use the stuff they downloaded!

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